

### **REMARKS**

Applicants would like to thank Examiner Balasubramanian for meeting with Applicants' representatives on March 19, 2003 to discuss Applicants' claimed invention. Based on the interview with the Examiner, the claims have been amended to further clarify Applicants' claimed invention.

#### **I. Status of the Claims**

Claim 1-19 and 21-30 have been cancelled without waiver, prejudice or disclaimer. New claims 32 and 33 have been added. New claims 32 and 33 are drawn to pyrrolo-pyrimidine compounds of formula I where  $R^2$  and  $R^3$  are each hydrogen and  $R^5$  is a piperidiny1 moiety, *i.e.*, piperidinylamino-substituted pyrrolo-pyrimidine compounds. As discussed with the Examiner, the prior art of Cockerill and Buzzetti fail to teach or suggest Applicants' claimed piperidinylamino-substituted pyrrolo-pyrimidine compounds. Support for new claim 32 can be found in the working examples found on pages 24-29 of the specification. Each example teaches pyrrolo-pyrimidine compounds substituted only in the 4-position wherein  $R^5$  is a piperidiny1 and  $R^2$  and  $R^3$  are each hydrogen. Support for new claim 33 can be found in claims 3 and 19 as originally filed as well as the exemplified compounds. No new matter has been added by the present amendment. Upon entry of this amendment, claims 20 and 31-33 will be pending.

#### **II. Specification**

It is the Examiner's position that the amendment to page 6 introduces new matter. This rejection has been rendered moot by the present amendment in which the terms "heterocycloalkyl" and "heteroaryl" have been amended back to their original form. Applicants respectfully request this rejection be withdrawn.

#### **III. Rejection Under 35 U.S.C. § 112, second paragraph**

Claims 1-20, 22 and 25-31 stand rejected under 35 U.S.C. 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the term "alkyl" of claim

13

1, the term "cancer leukemia" of claims 27 and 29, and the term "transplation" of claim 22 form the basis of the Examiner's rejection. This rejection has, in part, been rendered moot by the cancellation of claims 2-19, 22, and 25-30 and by the amendment of claims 20 and 31. With respect to new claims 32 and 33 for which support can be found in, among others, original claim 1, Applicants respectfully traverse this rejection with respect to the term "alkyl".


As set forth in MPEP 2173.04:

If the scope of the subject matter embraced by the claims is clear, and if applicants have not otherwise indicated that they intend the invention to be of a scope different from that defined in the claims, then the claims comply with 35 U.S.C. 112, second paragraph.

Thus as long as one skilled in the art would understand all the language in the claims when they are read in light of the specification, then the claim is not indefinite. Furthermore, as set forth in MPEP 2173.05(o):

The mere fact that a compound may be embraced by more than one member of a Markush group recited in the claim does not lead to any uncertainty as to the scope of that claim for either examination or infringement purposes.

As recognized by the Examiner, and as defined on page 5 of the specification, the term "alkyl" refers to a saturated monovalent hydrocarbon radical having straight or branched moieties or combinations thereof as well as cyclic alkyl groups (e.g., cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl or cycloheptyl). As would be understood by one of skill in the art, the claimed term "cycloalkyl" refers to a cyclic "alkyl" group. Thus, there is some overlap or "double inclusion" between the claimed terms "alkyl" and "cycloalkyl". However, the meaning of each of the terms "alkyl" and "cycloalkyl" do not contradict one another. As supported by MPEP 2173.05(o) (set forth above), as long as the overlap or "double inclusion" does not lead to any uncertainty as to the scope of the claim to one of ordinary skill in the art, then the overlap would not be improper for indefiniteness. Here, one of ordinary skill in the art would understand the terms "alkyl" and "cycloalkyl" as claimed. The terms do not render any uncertainty as to the scope of



the claims for examination or infringement purposes. Newly added claims 32 and 33 are not indefinite. Applicants respectfully request this rejection be withdrawn.

**IV. First Rejection Under 35 U.S.C. § 112, first paragraph**

Claims 22 and 25-30 stand rejected under 35 U.S.C. § 112, first paragraph. This rejection has been rendered moot by the cancellation of claims 22 and 25-30. Applicants respectfully request this rejection be withdrawn.

**V. Second Rejection Under 35 U.S.C. § 112, first paragraph**

Claims 1-20, 22 and 25-31 stand rejected under 35 U.S.C. § 112, first paragraph as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicants' amendment to change the definition of heterocycloalkyl and heteroaryl has resulted in broader scope than what was originally claimed. This rejection has been rendered moot by the present amendment in which the terms "heterocycloalkyl" and "heteroaryl" have been amended back to their original form. Applicants respectfully request this rejection be withdrawn.

**VI. First Rejection Under 35 U.S.C. § 103**

Claims 1, 22, and 25-26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cockerill et al., WO 98/02438 ("Cockerill"). Applicants respectfully traverse this rejection

Applicants' claimed invention is drawn to pyrrolo-pyrimidine compounds substituted solely at the 4-position with a -N(R<sup>4</sup>)(piperidiny1) moiety, *i.e.* piperidinylamino-substituted pyrrolo-pyrimidine compounds. Applicants contend that for the reasons given below, Cockerill does not render Applicants' claimed invention obvious.

Applicants contend that the genus of the present invention, as amended, is not *prima facie* obvious in view of Cockerill. The Board of Patent Appeals and

1

Interferences has stated that "to establish a *prima facie* case of obviousness, it is necessary for the examiner to present evidence, preferably in the form of some teaching, suggestion, incentive or inference in the applied prior art, or in the form of generally available knowledge, that one having ordinary skill in the art would have been led to combine the relevant teachings of the applied references in the proposed manner to arrive at the claimed invention." Ex parte Levengood, 28 USPQ2d 1300, 1301 (BOPAI 1993). Not only must there be evidence of motivation, but also the skilled worker must have an expectation that the combination of teachings would be successful.

Here the Examiner relies solely on Cockerill rather than a combination of references. Thus Cockerill must provide some teaching, suggestion, incentive or inference to not only modify its teachings and arrive at Applicant's claimed invention but also the skilled worker must be provided some reasonable expectation of success upon modification. More specifically, Cockerill must provide some teaching, suggestion, incentive or inference to pick and choose among the numerous variables of Cockerill's formula I (*i.e.*, A, R<sup>1</sup>, R", R<sup>2</sup>, p, n, X, Y and U) and arrive at Applicants' claimed piperidinylamino-substituted pyrrolo-pyrimidine compounds in such a way that one of skill in the art would have a reasonable expectation of success. Applicants respectfully submit that Cockerill fails to do so.

Cockerill describes bicyclic heteroaromatic compounds as protein tyrosine kinase inhibitors. *See* Title and Abstract. After sorting through five pages of description (pages 7-11) of Cockerill, the closest related compound of Cockerill to the compounds of the present invention, as amended, are those compounds of Formula I wherein X is N; A is pyrrolo; Y is W; W is NR<sup>a</sup>; R<sup>a</sup> is a (C<sub>1</sub>-C<sub>8</sub>)alkyl group; and U is a 5 to 10-membered mono or bicyclic ring system in which one or more of the carbon atoms is optionally replaced by a heteroatom independently selected from N, O or S(O)<sub>m</sub>, wherein the ring system is substituted by at least one independently selected R<sup>6</sup> group. However, as set forth in M.P.E.P. 2144.08, the fact that a claimed species or subgenus is encompassed by a prior art genus is not sufficient by itself to establish a *prima facie* case of obviousness (emphasis added). *In re Baird*, 16 F.3d 380, 382, 29 USPQ2d 1550, 1552 (Fed. Cir. 1994). In addition, "some motivation to select the claimed species or subgenus must be

12

taught by the prior art (emphasis added).” *In re Duel*, 51 F.3d at 1558-9, 34 USPQ2d at 1215. Applicants submit that Cockerill fails to provide such a teaching.

First, what is encompassed by “U” of formula I of Cockerill is broad, confusing and speculative since it is unclear as to whether unsaturated or saturated ring systems are encompassed by “U”. As discussed with the Examiner, a reference must be considered not only for what it expressly teaches, but also for what it fairly suggests. *In re Baird*, 16 F.3d 380, 29 USPQ2d 1550 (Fed. Cir. 1994). Thus one of skill in the art would rely upon the disclosure of Cockerill to determine the scope of “U”. On page 17 of Cockerill, suitable “U” groups are exemplified. Of the laundry list of possible “U” groups, there is no mention of a piperidinyll moiety. As a result of this silence, Cockerill would not and could not provide the necessary teaching, suggestion, incentive or inference to substitute or replace the exemplified ring systems defined by “U” with a piperidinyll group as in Applicants’ claimed invention, much less with any reasonable expectation of success.

Furthermore, as set forth in the preferred and exemplified embodiments, Cockerill suggest core pyrido-pyrimidine compounds. Still further, each of the working examples found on pages 49-61 of Cockerill refer to di- or tri-substituted pyrido-pyrimidine compounds. In contrast, the compounds of Applicants’ claimed invention, as amended, wherein  $R^2$  and  $R^3$  are each independently hydrogen, are pyrrolo-pyrimidine compounds mono-substituted at the 4-position with the amino group defined by  $R^1$ . Applicants respectfully submit that Cockerill does not provide the necessary teaching, suggestion, incentive or inference to arrive at the mono-substituted pyrrolo-pyrimidine compounds of Applicants’ claimed invention, as amended, and fails to provide any reasonable expectation of success such that a skilled worker would be motivated to modify the compounds of Cockerill.

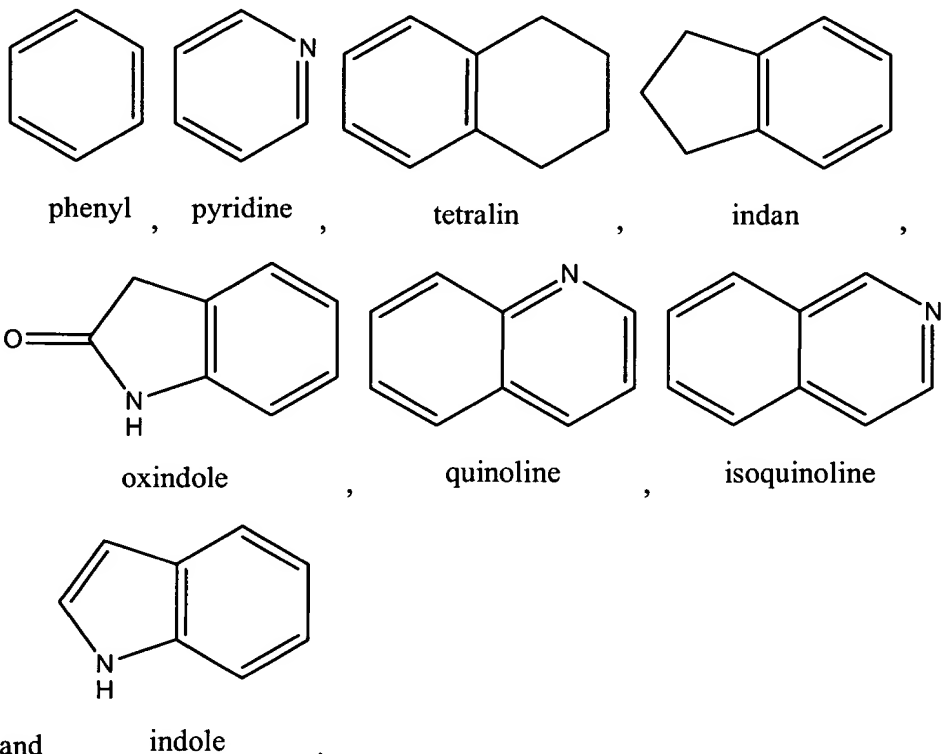
In view of the above remarks, Applicants respectfully request this rejection be withdrawn.

B

**VII. Second Rejection Under 35 U.S.C. § 103**

Claims 1, 22, and 25-30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Buzzetti et al., EP 0 795 556. Applicants respectfully traverse this rejection.

Like Cockerill, Buzzetti also fails to teach Applicants' claimed piperidinylamino-substituted core pyrrolo-pyrimidine compounds. The "A" group of Buzzetti's compounds of formula (I) is defined as "a mono- or bicyclic chosen from phenyl, pyridine, tetralin, indan, 2-oxindole, quinoline, isoquinoline and indole." Thus, Buzzetti's "A" group is limited to the following structures:



In contrast, the "A" group of Applicants' claimed compounds is R<sup>5</sup> which is a piperidinyl group. Buzzetti is silent as to piperidinyl groups. Thus, Buzzetti fails to provide the requisite teaching or suggestion to substitute its "A" group with a piperidinyl moiety, much less with any reasonable expectation of success. As such, Applicants'

*B*

claimed invention is not obvious in view of Buzzetti. Applicants respectfully request this rejection be withdrawn.

### **VIII. Double Patenting**

(a) Claims 1-2, 19, 22 and 25-30 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-2, 20 and 22-29 of copending Application No. 09/891,028 (the '028 application) and  
(b) Claims 1, 19, 22 and 25-30 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-12 of copending application no. 09/956,645 (the '645 application). Applicants respectfully traverse both of these rejections.

As the Examiner is aware, any analysis employed in an obviousness-type double patenting rejection parallels the guidelines for analysis of a 35 U.S. C. § 103 obviousness determination. As set forth above, a 35 U.S. C. § 103 obviousness determination requires a teaching or suggestion to modify the reference of rejection and arrive at Applicants' claimed invention with a reasonable expectation of success. Here, both the '028 application and the '645 application fail to teach or suggest the Applicants' claimed invention. R<sup>5</sup> of the present application and of both the '028 and '645 applications are completely distinct. Neither the '028 and '645 application claim R<sup>5</sup> as a piperidinyl group. As such, Applicants' claimed invention is not obvious in view of the claims of either the '028 or the '645 application. Applicants respectfully request this rejection be withdrawn.

### **IX. Conclusion**

Applicants respectfully request reconsideration of the subject application in view of the above remarks. The subject application is now in condition for allowance and early notice to that effect is respectfully solicited.

**EXCEPT** for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§ 1.16 and 1.17 which may be

B

required, including any required extension of time fees, or credit any overpayment to  
Deposit Account 16-1445. This paragraph is intended to be a **CONSTRUCTIVE**  
**PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. §  
1.136(a)(3).

Respectfully submitted,

Date: April 15, 2003

By: Christine S. Lee

Christine S. Lee  
Reg. No. 42,788

**Customer No. 28523**  
Pfizer Inc.  
Patent Department, MS 8260-1611  
Eastern Point Road  
Groton, Connecticut 06340  
(860) 686-2144

B